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EXAMINER

GEBREMICHAEL, BRUK A

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,893	<b>Applicant(s)</b> CARLSSON, NISS JONAS	
	<b>Examiner</b> BRUK A. GEBREMICHAEL	<b>Art Unit</b> 3715	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 25-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-77 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The following office action is a **Final Office Action** in response to communications received on 04/30/2009. Claims 1-24 are canceled. Claims 25-73 have been amended. New claims 74-77 have been added. Therefore, claims 25-77 are pending in this application.

### ***Response to Amendment***

2. Applicant's amendment to claims 26 and 44 is sufficient to overcome the claim objection set forth in the previous office action regarding claims 26 and 44. However, the amendment made to claims 54 and 70 is NOT sufficient to overcome the claim objection set forth in the previous office action; the term "optimised" needs to be replaced with -- optimized --.

Applicant's amendment to claims 26, 28, 32, 38, 44, 62 and 69 is sufficient to overcome the 35 U.S.C. 112, second paragraph rejection set forth in the previous office action regarding claims 26, 28, 32-34, 43-44, 46-52, 62-72. The Examiner accordingly withdraws the rejection.

However, the amendment is NOT sufficient to overcome the 35 U.S.C 112, second paragraph rejection with respect to claims 27, 39-42, 45, 53-61 and 73.

### ***Claim Objections***

3. Claims 26-27, 50, 54, 70 and 73 are objected to due to the following informalities;  
Claim 26-27 and 73 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

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required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 26 and 27 directly or indirectly depend on a claim that has already been canceled. However, for examination purpose, claim 26 is considered to be dependent on claim 25. In addition, claim 26 recites "A system according to . . ." in line 1 of the claim. This is believed to be an error for -- The system according to . . . --.

Claim 73 appears to be an independent method claim. However, it is improperly dependent on another system claim.

Regarding claims 50, 54, and 70, the phrase "optimised" is believed to be a typographical error for -- optimized --. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- Claims 74-77 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 74 recites "means for dynamically introducing words and phrases to the dictionary". However, the current specification does not appear to disclose this feature as recited in the claims.

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In addition, the above feature is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, since the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function “means for dynamically introducing words and phrases to the dictionary”,

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

Further more, the specification does not appear to disclose the feature “the user unknown words and phrases are introduced to the proactive dictionary simultaneously commensurate with the knowledge status of the user” as recited in claim 77.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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- Claims 27, 30, 33, 39-42, 45-46, 52-61, 68, 70 and 73 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 27, 45 and 53 still recite the limitation “say a factor zero point eight (0.8)”; and claims 52 and 68 recite “say a factor (2)”. These limitations render these claims and the claims that directly or indirectly depend on the above claims indefinite since it is unclear whether this limitation is part of the claimed invention.

In addition, the phrase “preferably” in claims 30, 33, 40, 59 and 64; the phrase “e.g.” in claims 39 and 58; and the phrase “such as” in claims 46, 68 and 70 render these claims (and the claims that directly or indirectly depends on claim 39) indefinite since it is unclear whether the limitation(s) following this phrase is part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- Claims 25, 28, 35-37, and 51 are rejected under 35 U.S.C. 102(e) as being unpatentable over Futakuchi 2001/0051330.

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Regarding claims 25 and 51, Futakuchi discloses the following claimed limitations, a system/method for individual learning, said system (1) comprising an apparatus (2) for controlling the learning system (1) (FIG 1, label 3), at least one communication network (3) (FIG 1, Internet), at least one user terminal (4) (see FIG 1, label 3a), at least one content data base (5) provided with information units, comprising questions and answers (Q/A) (FIG 1, label 4), said content data base (5) being connectable to said apparatus (2) (FIG 1, labels 3 and 4), wherein said apparatus (2) further comprises at least one system data base (10) for storing user specific data (see FIG 1, label 3a), means for identification and/or verification of a user (at least one of identifying and verifying), administration means providing said user to control the system (1) (Para.0042), and means (8) for registration of transactions a user performs (Para.0019), wherein said apparatus (2) is connectable to a learning tool (11 ) comprising an interface (12) for presenting data to the user (Para.0045 and FIG 4), wherein the learning tool (11 ) is arranged to provide selective training according to the user's knowledge and to present a dynamic image of the knowledge status for the user in each point in time (Para.0047, lines 1-12 and Para.0049, lines 1-5),

Regarding claim 28, a filter means (18) are provided in the learning tool (11), for presenting information units Q/A:s in a particular order to the user (Para.0047),

Regarding claim 35, wherein the administration means (7) is arranged to provide a user to control the system (1) (Para.0042),

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Regarding claim 36, the means (8) for registration is arranged to register transactions a user performs, and to store data in the system data base (10) comprising user specific data (Para.0019 and Para.0050),

Regarding claim 37, the user terminal (4) is a mobile phone, a PDA, a laptop or a PC (FIG 1, label 1).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Ho 6,212,358.

Regarding claim 29, Futakuchi discloses the claimed limitations as discussed above.

Futakuchi does not explicitly discuss, diagnosis means (20) is provided to estimate the knowledge of the user within a subject.

However, Ho teaches, diagnosis means (20) is provided to estimate the knowledge of the user within a subject (col.7, lines 53-59 and col.8, lines 46-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho by incorporating an assessor in the system in order to evaluate the accuracy of the



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student's answers by comparing the responses to the stored answers, thereby establishing the student's learning progress.

Regarding claim 30, Futakuchi discloses the claimed limitations as discussed above.

Futakuchi does not explicitly discuss, tool (21) for extracting information units from non-preprepared information, preferably to create Q/A:s from a non- prepared digital text is provided in the apparatus (2).

However, Ho teaches, tool (21) for extracting information units from non-preprepared information, preferably to create Q/A:s from a non- prepared digital text is provided in the apparatus (2) (col.7, lines 45-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho by including a question generator in the system in order to assemble questions or problems from the study materials that the student covered so that the system would indicate the study progress of the student based on the student's result.

- Claims 31-32, 34, 38-41, 43, 46, 48-50, 62-65, 67, 70 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Geshwind 2002/0052860.

Regarding claim 31, Futakuchi discloses the claimed limitations as discussed above.

Futakuchi does not positively disclose, at least one proactive dictionary (22) is connectable to the system (1) or provided in the apparatus (2), said dictionary (22)

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being adapted to present words considered by the system (1) to be unknown for the user.

However, Geshwind teaches, at least one proactive dictionary (22) is connectable to the system (1) or provided in the apparatus (2), said dictionary (22) being adapted to present words considered by the system (1) to be unknown for the user (Para.0098).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by incorporating a dictionary as a link in order to provide the student a quick access to a definition of unfamiliar word or phrase, thereby helping the student to understand the study material without difficulties.

Regarding claim 32, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, wherein said dictionary (22) is arranged to check a text, either stored in the system or introduced to the system from an external source, to a user's profile, to look up data not known by the user, and presenting translations or other types of Q/A:s simultaneously (FIG 14, labels 1410 and 1420).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by configuring the system to first check the unknown word or phrase in a glossary of terms related to the student's study material in order to provide the student a definition consistent with the subject of study, thereby helping the student to comprehend the

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study material efficiently. Here, as already indicated in Geshwind's reference, the system would further check the unknown word against a general dictionary if its definition were not found in the glossary of terms.

Regarding claim 34, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, at least one external dictionary (24) is connectable to the system (1), said at least one external dictionary being adapted to cooperate with the system (FIG 14, labels 1410 and 1420).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by providing a domain-specific glossary of terms and a general dictionary in order to help the student to understand some of the terms (words) that are not defined in the domain-specific glossary by using the general dictionary so that the student would have the flexibility to use additional resources when needed.

Regarding claims 38 and 62, Futakuchi discloses the following claimed limitations, a system/method for individual learning, said system (1) comprising an apparatus (2) for controlling the learning system (1) (FIG 1, label 3), at least one communication network (3) (FIG 1, Internet), at least one user terminal (4) (see FIG 1, label 1), at least one content data base (5) provided with information units, comprising questions and answers (Q/A) (FIG 1, label 4), said content data base (5) being connectable to said apparatus (2) (FIG 1, labels 3 and 4), wherein said apparatus (2) further comprises at least one system data base (10) for storing user specific data (see

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FIG 1, label 3a), means for identification and/or verification of a user, administration means providing said user to control the system (1) (at least one of identifying and verifying administrating) (Para.0042), and means (8) for registration of transactions a user performs (Para.0019).

Futakuchi does not positively disclose, at least one proactive dictionary (22) is connectable to the system (1) or provided in the apparatus (2), said dictionary (22) being adapted to present words considered by the system (1) to be unknown for/to the user.

However, Geshwind teaches, at least one proactive dictionary (22) is connectable to the system (1) or provided in the apparatus (2), said dictionary (22) being adapted to present words considered by the system (1) to be unknown for/to the user (Para.0098).

Therefore, here also it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by incorporating a dictionary in the system as a link in order to provide the student a quick access to a definition of unfamiliar word or phrase, thereby helping the student to understand the study material without difficulties.

Regarding claims 39 and 63, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, said dictionary (22) is arranged to check a text, either stored in the system or introduced to the system from an external source (e.g. Internet),

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to a user's profile, to look up data not known by the user, and presenting translations or other types of Q/A:s simultaneously (Para.0097 and Para.0098).

Therefore, as already indicated above, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by incorporating a dictionary as a link or a web-page in order to provide the student a quick access to a definition of unfamiliar word or phrase, thereby helping the student to understand the study material without difficulties.

Regarding claims 41 and 65, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, at least one external dictionary (24) is connectable to the system (1), said at least one external dictionary being adapted to cooperate with the system (FIG 14, labels 1410 and 1420).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by providing a domain-specific glossary of terms and a general dictionary in order to help the student to understand some of the terms (words) that are not defined in the domain-specific glossary by using the general dictionary so that the student would have the flexibility to use additional resources when needed.

Futakuchi in view of Geshwind teaches the claimed limitations as discussed above. Futakuchi further discloses,

Regarding claims 43 and 67, said apparatus (2) is connectable to a learning tool (11) comprising an interface (12) for presenting data to the user, said the learning tool

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(11) being arranged to provide selective training according to the user's knowledge and to present a dynamic image of the knowledge status for the user in each point in time (Para.0047, lines 1-12 and Para.0049, lines 1-5),

Regarding claims 46 and 70, filter means (18) are provided, preferably in the learning tool (11 ), for presenting information units, such as Q/A:s in a particular order to the user (Para.0047),

Regarding claims 48 and 72, the administration means (7) is arranged to provide a user to control the system (1) (Para.0042),

Regarding claim 49, the means (8) for registration is arranged to register transactions a user performs, and to store data in the system data base (10) comprising user specific data (Para.0049 and Para.0050),

Regarding claim 50, the user terminal (4) is a mobile phone, a PDA, a laptop or a PC (FIG 1, label 1).

- Claims 33, 40, 42, 47, 64, 66 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Geshwind 2002/0052860 and further in view of Ho 6,212,358.

Regarding claim 33, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, the dictionary (22) is connectable to user's profile for acceptable texts or fragments of texts, based on stated interest and level of knowledge (Para.0094 and Para.00101, lines 1-10).

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Futakuchi in view of Geshwind does not explicitly teach, a tool for extraction of teaching or learning material from texts.

However, Ho teaches a tool for extraction of teaching or learning material from texts (col.6, lines 11-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind and further in view of Ho by incorporating a generator (or a selector) in the system in order to select items to be learnt from the item (subject) storage medium (see FIG 2, label 106) so that items that are suitable to a given study material are presented to the student.

Regarding claims 40 and 64, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Geshwind further teaches, said dictionary (22) is connectable to a user's profile for acceptable texts or fragments of texts, based on stated interest and level of knowledge (*interest and knowledge* per claim 64) (see Para.0098 and Para.0101, lines 1-10).

Futakuchi in view of Geshwind does not explicitly teach, a tool for extraction of teaching or learning material from texts.

However, Ho teaches, a tool for extraction of teaching or learning material from texts (col.6, lines 11-23).

Therefore, here also it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of

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Geshwind and further in view of Ho by incorporating a generator (or a selector) in the system in order to select items to be learnt from the item (subject) storage medium (see FIG 2, label 106) so that items that are suitable to a given study material are presented to the student.

Regarding claims 42 and 66, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Futakuchi in view of Geshwind does not explicitly teach, tool (21) for extracting information units from non-preprepared information, preferably to create Q/A:s from a non- preprepared digital text is provided in the apparatus (2).

However, Ho teaches, tool (21) for extracting information units from non-preprepared information, preferably to create Q/A:s from a non- preprepared digital text is provided in the apparatus (2) (col.7, lines 45-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind and further in view of Ho by including a question generator in the system in order to assemble questions or problems from the study materials that the student covered so that the system would indicate the study progress of the student based on the student's result.

Regarding claims 47 and 71, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

Futakuchi in view of Geshwind does not explicitly teach, diagnosis means (20) is provided to estimate the knowledge of the user within a subject.



Ho teaches, diagnosis means (20) is provided to estimate the knowledge of the user within a subject (col.7, lines 53-59 and col.8, lines 46-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind and further in view of Ho by incorporating an assessor in the system in order to evaluate the accuracy of the student's answers by comparing the responses to the stored answers, thereby establishing the student's learning progress.

- Claims 26-27, 52-56, 61 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Ho 6,212,358 and further in view of Meimer 2002/0115048.

Regarding claims 26 and 52, Futakuchi discloses the claimed limitations as discussed above.

Futakuchi further discloses, the system data base (10) is adapted to store information about user profiles, comprising individual information one such information being current type of learning state, or knowledge status, for each Q/A in relation to respective user (Para.0055).

Futakuchi does not positively disclose, the learning states comprising the types: "not learned", "test required", "repetition required", "estimated as knowledge", "knowledge", and "knowledge not further checked", that said learning tool 11 is connectable to, or comprises, a test and repetition tool (19) for optimized long term repetition, that said test and repetition tool 19 is adapted to store a point of time when a Q/A is marked as "knowledge" for a particular user, that said test and repetition tool (19)

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is adapted to control the time  $T_{\text{next test}}$  to which the user has to answer this question again, that if no repetition or test is made to prolong the time  $T_{\text{next test}}$ , then said test and repetition tool (19) is adapted to expire the point in time  $T_{\text{next test}}$  and change the state of the Q/A from "knowledge" to "test required", that if no test is done by the user then said test and repetition tool (19) is adapted to deteriorate the virtual dynamic image of said user's acquired knowledge in the system over time until all Q/A marked as "knowledge" changes state to "test required", that said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to "repetition required", that if the Q/A is correctly answered, then the test and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time period  $T_{\text{next test}}$  by a factor higher than one, (say a factor two (2) per claim 52), that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked".

However, Ho teaches, the learning states comprising the types: "not learned", "test required", "repetition required", "estimated as knowledge", "knowledge", and "knowledge not further checked", that said learning tool 11 is connectable to, or comprises, a test and repetition tool (19) for optimized long term repetition, that said test

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and repetition tool 19 is adapted to store a point of time when a Q/A is marked as "knowledge" for a particular user, that said test and repetition tool (19) is adapted to control the time  $T_{\text{next test}}$  to which the user has to answer this question again (see col.9, lines 9-17), that if no repetition or test is made to prolong the time  $T_{\text{next test}}$ , then said test and repetition tool (19) is adapted to expire the point in time  $T_{\text{next test}}$  and change the state of the Q/A from "knowledge" to "test required" (col.9, lines 28-33), that if no test is done by the user then said test and repetition tool (19) is adapted to deteriorate the virtual dynamic image of said user's acquired knowledge in the system over time until all Q/A marked as "knowledge" changes state to "test required" (col.9, lines 34-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho by categorizing the study materials as learnt line-items and the un-learnt line items, in order to provide the student the un-learnt line items which would be later classified as learnt line items after studied by the student; and also by configuring the system to select the learnt line item based on a predetermined time elapsed when the line item is reclassified as from the un-learnt to the learnt mode in order to prevent the repetition of the line item while the concept is still fresh to the student.

Futakuchi in view of Ho does not explicitly teach, said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to "repetition required", that if the Q/A is correctly answered, then the test

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and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time period  $T_{\text{next test}}$  by a factor higher than one, (say a factor two (2) per claim 52), that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked".

However, Meimer teaches, said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to "repetition required" (Para.0047 and FIG 4, labels 418 and 420), that if the Q/A is correctly answered, then the test and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time period  $T_{\text{next test}}$  by a factor higher than one, say a factor two (2), that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, (Para.0049, lines 1-8 and para.0050) and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked" (Para.0050).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho and

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further in view of Meimer by including a series of levels (e.g. see FIG 3) associated with the questions in the system in order to classify the questions that are answered correctly in a reasonable amount of time to the sections where the questions would be presented after a prolonged period of time, and also to classify the questions that are answered incorrectly to the sections where these questions would be presented after a predetermined short period of time, thereby giving the student more chance to practice on the study material that he/she has difficulty understanding.

Regarding claims 27 and 53, Futakuchi in view of Ho and further in view of Meimer teaches the claimed imitations as discussed above.

Meimer further teaches, said test and repetition tool (19) comprises a sorting tool (17), that said sorting tool (17) is adapted to perform repetition using a short term learning cycle when a Q/A has the state "repetition required" (Para.0067, lines 6-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho and further in view of Meimer by arranging (i.e. sorting) the correctly answered questions to the learnt level and the incorrectly answered questions to the "Missed Info" level so that the questions in the later section would be repeated to the student in a short time period interval so that the student would get a chance to comprehend the study material appropriately.

Note that even if Futakuchi in view of Ho and further in view of Meimer does not explicitly teach, the repetition tool (19) is adapted to extend the time period  $T_{\text{next test}}$  by a

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factor lower than one, say a factor zero point eight (0.8), this limitation is implicitly taught in the prior art (e.g. Meimer Para.0068, lines 4-7).

Regarding claims 54-61 and 73, Futakuchi in view of Ho and further in view of Meimer teaches the claimed limitations as discussed above.

Regarding claim 54, Futakuchi further discloses, filter means (18) presents information units, such as Q/A's in an order optimised for the specific user's needs (Para.0047),

Regarding claim 55, Ho further teaches, diagnosis means (20) estimates the knowledge of the user within a subject (col.7, lines 53-59 and col.8, lines 46-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho and further in view of Meimer by incorporating an assessor in the system (as taught by Ho) in order to evaluate the accuracy of the student's answers by comparing the responses to the stored answers, thereby establishing the student's learning progress.

Regarding claim 56, Ho further discloses, wherein in tool (21) for extracting information units from non-preprepared information creates Q/A's from a non-preprepared digital text (col.7, lines 45-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho and further in view of Meimer by including a question generator in the system in order to assemble questions or problems from the study materials that the student covered so that the system would indicate the study progress of the student based on the student's result.

Regarding claim 61, Futakuchi further discloses, the administration means (7) provides a user to control the system (1) (Para.0042),

Regarding claim 73, Futakuchi further discloses, a method for individual learning in the system according to claim 27, further comprising a computer program product stored on a computer useable medium, comprising in a computer readable code means for executing (Para.0020, lines 1-9).

- Claims 57-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Ho 6,212,358, in view of Meimer 2002/0115048 and further in view of Geshwind 2002/0052860.

Regarding claim 57, Futakuchi in view of Ho and further in view of Meimer teaches the claimed limitations as discussed above.

Futakuchi in view of Ho and further in view of Meimer does not explicitly teach, at least one proactive dictionary (22) is connected to the system (1) or provided in the apparatus (2), said dictionary (22) presenting words considered by the system (1) to be unknown for the user.

However, Geshwind teaches at least one proactive dictionary (22) is connected to the system (1) or provided in the apparatus (2), said dictionary (22) presenting words considered by the system (1) to be unknown for the user (Para.0098).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho, in view of Meimer and further in view of Geshwind by incorporating a dictionary as a link in order

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to provide the student a quick access to a definition of unfamiliar word or phrase, thereby helping the student to understand the study material without difficulties.

Regarding claims 58-60, Futakuchi in view of Ho, in view of Meimer and further in view of Geshwind teaches the claimed limitations as discussed above.

Regarding claim 58, Geshwind further teaches, said dictionary (22) checks a text, either stored in the system or introduced to the system from an external source (e.g. Internet), to a user's profile, to look up data not known by the user, and presents translations or other types of Q/A's simultaneously (FIG 14, labels 1410 and 1420).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho, in view of Meimer and further in view of Geshwind by configuring the system to first check the unknown word or phrase in a glossary of terms related to the student's study material in order to provide the student a definition consistent with the subject of study, thereby helping the student to comprehend the study material efficiently. Here, as already indicated in Geshwind's reference, the system would further check the unknown word against a general dictionary if its definition were not found in the glossary of terms.

Regarding claim 59, Geshwind further teaches, dictionary (22) is connected to a user's profile for acceptable texts or fragments of texts, based on stated interest and level of knowledge (Para.0094 and Para.0101, lines 1-10).

Ho further teaches, a tool (25) for extraction of teaching or learning material from texts (col.6, lines 11-23).



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Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho, in view of Meimer and further in view of Geshwind by incorporating a generator (or a selector) as taught by Ho in the system in order to select items to be learnt from the item (subject) storage medium (see FIG 2, label 106) so that items that are suitable to a given study material are presented to the student.

Regarding claim 60, Geshwind further teaches, at least one external dictionary (24) is connected to the system (1), and that said at least one external dictionary cooperates with the system (FIG 14, labels 1410 and 1420).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Ho, in view of Meimer and further in view of Geshwind by providing a domain-specific glossary of terms and a general dictionary in order to help the student to understand some of the terms (words) that are not defined in the domain-specific glossary by using the general dictionary so that the student would have the flexibility to use additional resources when needed.

- Claims 44-45 and 68-69, are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Geshwind 2002/0052860, in view of Ho 6,212,358 and further in view of Meimer 2002/0115048.

Regarding claims 44 and 68, Futakuchi in view of Geshwind teaches the claimed limitations as discussed above.

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Futakuchi further discloses, the system data base (10) is adapted to store information about user profiles, i. e. individual information (*such as statistical information* per claim 68), one such information being current type of learning state, or knowledge status, for each Q/A in relation to respective user (Para.0055).

Futakuchi in view of Geshwind does not positively disclose, the learning states comprising the types: "not learned", "test required", "repetition required", "estimated as knowledge", "knowledge", and "knowledge not further checked", that said learning tool 11 is connectable to, or comprises, a test and repetition tool (19) for optimized long term repetition, that said test and repetition tool 19 is adapted to store a point of time when a Q/A is marked as "knowledge" for a particular user, that said test and repetition tool (19) is adapted to control the time  $T_{\text{next test}}$  to which the user has to answer this question again, that if no repetition or test is made to prolong the time  $T_{\text{next test}}$ , then said test and repetition tool (19) is adapted to expire the point in time  $T_{\text{next test}}$  and change the state of the Q/A from "knowledge" to "test required", that if no test is done by the user then said test and repetition tool (19) is adapted to deteriorate the virtual dynamic image of said user's acquired knowledge in the system over time until all Q/A marked as "knowledge" changes state to "test required", that said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to "repetition required", that if the Q/A is correctly answered, then the test and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time

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period  $T_{\text{next test}}$  by a factor higher than one (*say a factor two (2)* per claim 68), that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked".

However, Ho teaches, the learning states comprising the types: "not learned", "test required", "repetition required", "estimated as knowledge", "knowledge", and "knowledge not further checked", that said learning tool 11 is connectable to, or comprises, a test and repetition tool (19) for optimized long term repetition, that said test and repetition tool 19 is adapted to store a point of time when a Q/A is marked as "knowledge" for a particular user, that said test and repetition tool (19) is adapted to control the time  $T_{\text{next test}}$  to which the user has to answer this question again (see co1.9, lines 9-17), that if no repetition or test is made to prolong the time  $T_{\text{next test}}$ , then said test and repetition tool (19) is adapted to expire the point in time  $T_{\text{next test}}$  and change the state of the Q/A from "knowledge" to "test required" (co1.9, lines 28-33), that if no test is done by the user then said test and repetition tool (19) is adapted to deteriorate the virtual dynamic image of said user's acquired knowledge in the system over time until all Q/A marked as "knowledge" changes state to "test required" (co1.9, lines 34-40).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind and further in view of Ho by categorizing the study materials as learnt line-items and the

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un-learned line items, in order to provide the student the un-learned line items which would be later classified as learned line items after studied by the student; and also by configuring the system to select the learned line item based on a predetermined time elapsed when the line item is reclassified as from the un-learned to the learned mode in order to prevent the repetition of the line item while the concept is still fresh to the student.

Futakuchi in view of Geshwind and further in view of Ho does not explicitly teach, said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to "repetition required", that if the Q/A is correctly answered, then the test and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time period  $T_{\text{next test}}$  by a factor higher than one (*say a factor two (2)* per claim 68) that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked".

However, Meimer teaches, said test and repetition tool (19) is adapted to pose the Q/A question to the user at a point in time when test of a Q/A is performed by the user through the test and repetition tool (19), that if the answer to a question is wrong, then said test and repetition tool (19) is adapted to change the status of this Q/A to

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"repetition required" (Para.0047 and FIG 4, labels 418 and 420), that if the Q/A is correctly answered, then the test and repetition tool (19) is adapted to change the status of the Q/A to "knowledge" and extend the time period  $T_{\text{next test}}$  by a factor higher than one (*say a factor two (2)* per claim 68) that if time has passed between the  $T_{\text{next test}}$  expired and the user started the test for the Q/A, then said test and repetition tool (19) is adapted to add this time to the  $T_{\text{next test}}$  before the extension factor is applied, (Para.0049, lines 1-8 and para.0050) and that when the time period  $T_{\text{next test}}$  is longer than a predetermined time period, then said test and repetition tool (19) is adapted to mark this Q/A as "knowledge not further checked" (Para.0050).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind, in view of Ho and further in view of Meimer by including a series of levels (e.g. see FIG 3) associated with the questions in the system in order to classify the questions that are answered correctly in a reasonable amount of time to the sections where the questions would be presented after a prolonged period of time, and also to classify the questions that are answered incorrectly to the sections where these questions would be presented after a predetermined short period of time, thereby giving the student more chance to practice on the study material that he/she has difficulty understanding.

Regarding claims 45 and 69, Futakuchi in view of Geshwind, in view of Ho and further in view of Meimer teaches the claimed limitations as discussed above.

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Meimer further teaches, said test and repetition tool (19) comprises a sorting tool (17), that said sorting tool (17) is adapted to perform repetition using a short term learning cycle when a Q/A has the state "repetition required" (Para.0067, lines 6-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind, in view of 14o and further in view of Meimer by arranging (i.e. sorting) the correctly answered questions to the learnt level and the incorrectly answered questions to the "Missed Info" level so that the questions in the later section would be repeated to the student in a short time period interval so that the student would get a chance to comprehend the study material appropriately.

Note that even if Futakuchi in view of Geshwind, in view of Ho and further in view of Meimer does not explicitly teach, the repetition tool (19) is adapted to extend the time period  $T_{\text{next test}}$  by a factor lower than one (*say a factor zero point eight (0.8)* per claim 45), this limitation, is implicitly taught in the prior art (e.g. Meimer Para.0068, lines 4-7).

- Claims 74-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Futakuchi 2001/0051330 in view of Geshwind 2002/0052860 and further in view of Miller 5,896,321.

Regarding claim 74, Futakuchi discloses the claimed limitations as discussed above.

Futakuchi further teaches words and phrases being determined to be unknown to the user and selected as to level of difficulty with respect to the user (Para.0048),

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whereby the system dynamically introduces and the user dynamically learns the words and phrases (Para.0049).

Futakuchi does not explicitly teach, a proactive dictionary, and means for operably connecting said proactive dictionary to the learning tool, and means for dynamically introducing words and phrases to the dictionary, and words and phrases being determined to be unknown to the user and selected as to level of difficulty and subject of interest.

However, Geshwind teaches, a proactive dictionary, and means for operably connecting said proactive dictionary to the learning tool (FIG 14, labels 1410 and 1420); and words and phrases being determined to be unknown to the user and selected as to level of difficulty and subject of interest (Para.0098 and Para.0118).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind by incorporating a dictionary as a link in order to provide the student a quick access to a definition of unfamiliar word or phrase, thereby helping the student to understand the study material without difficulties.

Futakuchi in view of Geshwind does not explicitly teach, means for dynamically introducing words and phrases to the dictionary.

However, Miller teaches means for dynamically introducing words and phrases to the dictionary (col.8, lines 22-36 and col.9, lines 4-24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind

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and further in view of Miller by incorporating the dynamic dictionary taught by Miller in order to augment words that are not found in the ordinary dictionary so that the dynamic dictionary would automatically add/updates the new words into the system thereby making the modified system more efficient and comprehensive.

Regarding claims 75-77, Futakuchi in view of Geshwind and further in view of Miller teaches the claimed limitations as discussed above.

Regarding claim 75, Futakuchi further discloses, words and phrases comprise digital text, and means for preparing the questions and answers from said digital text (Para.0043).

Miller further teaches, digital text being dynamically introduced to the dictionary for the training of and learning by the user (col.8, lines 22-36, and col.9, lines 4-24).

Therefore, as already discussed with respect to claim 74, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Futakuchi in view of Geshwind and further in view of Miller by incorporating the dynamic dictionary taught by Miller in order to augment words that are not found in the ordinary dictionary so that the dynamic dictionary would automatically add/updates the new words into the system thereby making the modified system more efficient and comprehensive.

Regarding claim 76, Futakuchi further discloses, said digital text comprises internet content (Para.0043),



Regarding claim 77, the user unknown words and phrases are introduced to the proactive dictionary simultaneously commensurate with the knowledge status of the user (Para.0051).

***Response to Arguments.***

8. Applicant's arguments filed on 04/30/2009 have been fully considered but they are not persuasive. In the remarks,

(1) Applicant argues that the features defined by the terms "non-preprepared information" and "non- preprepared digital text" distinguish the present system from systems using previously prepared (i.e. preprepared) material pre-stored in system specific databases, such as disclosed in Futakuchi .0055, Geshwind .0098, Ho col. 7, line 53-57, Meimer .0037 and FIG.2 (212). . .

The present invention relates to a learning system and method for individual training. In particular, the invention relates to such a system and method that provide a user access at any desired time point or location to a virtual dynamic image of his or hers current knowledge status." (pg. 1, lines 5-7, emphasis supplied). . .

- In response to argument (1), the Examiner respectfully disagrees. First of all, the support provided by the Applicant with regard to the "non-preprepared information" and "non-preprepared digital text" does not appear to be relevant to the above features since the section emphasized by the Applicant (page 1, lines 7-11 of the current specification) merely describes how a given pre-prepared information such as a proactive dictionary is utilized to translate words or phrases to the user. This does not appear to be related to the above "non- preprepared" features recited. For example, it is

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well known in the art that a dictionary is a pre-prepared document that a user utilizes to define words or phrases. Similarly, a computer application program utilizes a pre-prepared electronic dictionary to automatically define (or correct spellings of) words or phrases.

Secondly, assembling a personalized teaching and learning content based on the user's interest and difficulty level of the subject is already well known in the art at the time of Applicant's invention was made. For example, Geshwind discloses an internet-mediated educational system that utilizes an artificial intelligence technology (Para.0050) to adjust the complexity level of the lesson materials based on the student's knowledge and interest. For instance the line "Student responses to questions confirming that material has been mastered (assessment) are traditionally used to determine what material to present next. However, in addition, the number of right or wrong answers, the speed of answers, and other factors, are used to assess student interest and attention and, further, to adjust the level of detail and complexity, type of media, type of pedagogy, or speed of the presentation--slowing and/or elucidating for students having trouble, for whatever reason. See (1650)." (Para.0118) clearly suggests the above fact. Note that anyhow, claims are given the broadest reasonable interpretations without importing any limitation from the specification. That means, only the claims are considered (but not the disclosure of the specification) when examining the current invention with respect to the teaching of the prior art. Nevertheless, the above discussion is presented to illustrate the fact that such system is old and well known in the art.

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(2) Applicant argues that regarding independent claims 25 and 51, there is a distinct difference between the invention's characteristics to "... provide selective training according to the user's knowledge and to present a dynamic image of the knowledge status for the user in each point in time" and the referred characteristics in Futakuchi par .0047, lines 1-12 and par .0049, lines 1-5 describing a system using "tips".

Regarding claims 29, 47, 55 and 71, Ho at col. 8, lines 46-51, refers to "learning progress" while the invention explicitly states "the knowledge". This due to the fact that the invention measures the knowledge (state of knowing fact A and fact B in each point in time) compared to the "learning progress" or "level of knowledge" (having learnt fact A or fact B at some point in time). This can further be supported in the application "Field of the Invention".

- In response to argument (2), the Examiner respectfully disagrees. As already indicated above, claims are given the broadest reasonable interoperations without importing any limitation from the specification. Thus, based on such interpretation, Futakuchi discloses the claimed feature "provide selective training according to the user's knowledge and to present a dynamic image of the knowledge status for the user in each point in time". For instance the line, "For example, if the first answer to a question given to the student is blank, a tip on the first level will be provided to the student (the first level tip and the first answer). If the second answer to the same question is also blank, a tip on the second level will be provided to the student (the second level tip and the second answer). Prior to providing a tip, the control unit 3 selects a tip level for a tip to be provided to the student in the tip table 8 so that an

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appropriate tip is provided to the student. . .” (Para.0048) discloses that Futakuchi’s system actually teaches a student for example how to solve a given question by selecting different tips (i.e. providing selective training) that help the student to get to the answer of the question. Futakuchi further discloses, “Returning to the step of determining whether the answer is blank, if it is determined that the answer is not blank, then the control unit 3 provides the student with a mistake indicating comment selected from a wrong answer prediction table 9 in the comment section 7. . . The mistake indicating comments are comments that not only tell a student that his/her answer is wrong, but also the reason his/her answer is wrong, and prompt him/her to consider the question again paying special attention to such mistake.” (Para.0051, lines 1-18), discloses that Futakuchi’s system also presents to the student comments indicating the student’s mistakes and the reason why the answer is wrong (i.e. presenting dynamic image of the knowledge status for the user in each point in time).

Therefore, it is clear from the above brief discussion that Futakuchi’s system does disclose Applicant’s currently presented claimed features.

(3) Applicant argues that regarding claims 29, 47, 55 and 71, Ho at col. 8, lines 46-51, refers to "learning progress" while the invention explicitly states "the knowledge". This due to the fact that the invention measures the knowledge (state of knowing fact A and fact B in each point in time) compared to the "learning progress" or "level of knowledge" (having learnt fact A or fact B at some point in time). This can further be supported in the application "Field of the Invention". . .

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- In repose to argument (3), the Examiner respectfully disagrees. For example, claim 29 recites “. . . diagnosis means is provided to estimate the knowledge of the user within a subject”. Ho teaches such a diagnosis means (the assessor) that estimates the knowledge of the student related to a given subject. Note that the assessor is asking the student a question related to a given line-item (i.e. subject) to determine the knowledge of the student related to that line-item. That means, if the student answers questions correctly related to a particular line-item (subject), then the student has knowledge of that line-item. Thus, the system would evaluate the student's knowledge based on his/her ability to answer the presented questions.

Note also that even if the prior art teaches that the assessor determines the student's learning progress, it should be clear that knowledge is implied here since the progress level is determined based on the student's ability to answer questions correctly or incorrectly. That means, if the student has knowledge of a particular line-item, he/she would be able to correctly answer questions related to that line-item, or vice versa.

Therefore, one of ordinary skill in the art would readily recognize the fact from the teaching of Ho that, the assessor of Ho's system evaluates the knowledge of the student when determining the progress level.

(4) Applicant argues that regarding Claims 30, 42, 56 and 66, it is referred to in Ho col. 7, lines 45- 51, as being the "tool (21)for extracting information units from non-preprepared information..." However this reference section talks about Question Generator generating questions from the Question database (FIG 2, 110 and 118). A database is by definition preprepared and by being previously filled with data, in this

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case questions. Instead the invention's "tool (21) for extracting information units from non-preprepared information..." relates to the need of easily filling the database with new questions and answers (Q/A's). This is supported by "Tool for facilitating creation of Q/A's." . . .

- In response to argument (4), the Examiner respectfully disagrees. The Applicant is attempting to indicate that the current invention extracts questions from digital text such as a document from the internet, and this is a non-preprepared. This appears to be a narrow interpretation that even contradicts with Applicant's invention. First of all, for any information to be accessed on the internet, that information must be available on the Internet; and in order such information to be available on the Internet, that information must be preprepared and uploaded on the Internet. This settles the fact that the digital text that the current invention is accessing on the Internet is in fact a preprepared document.

Secondly, even if the current invention is retrieving questions from the Internet, this does not mean that the questions are non-preprepared. As already discussed above, the document must be preprepared before it is being accessed. According to the specification, the current invention appears to retrieve questions from external database(s) on the Internet. However, it is has already been indicated that the data must be first available (i.e. preprepared) on the external database (Internet) before the current invention gets access to it.

Therefore, Applicant's argument with this regard is also NOT persuasive.

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(5) Applicant argues that regarding claims 31, 32, 38, 57, 58 and 62, it is argued that by combining Futakuchi and Geshwind one would be able to create a "proactive dictionary (22)" as described in the invention. However, there is a misconception as there are static general system databases in Geshwind: "domain-specific glossary" and "full English (or language of choice) dictionary" which are compared to a text entry while in the invention there is a dynamic image (changes in each point in time) of the user's knowledge states for entries in general system databases (which could be glossaries or dictionaries) to a text entry. . .

- In response to argument (5), the Examiner respectfully disagrees. First of all, any interpretation or argument directed to the description in the specification is NOT persuasive since as already indicated above, claims are given the broadest reasonable interpretations without importing any limitation from the specification. It has been held that claims are given their broadest reasonable interpretation in light of the supporting disclosure. In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See also In re Zletz, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Secondly, the dictionary unit discussed in Geshwind's invention is not a static system as the Applicant attempted to argue. Geshwind's system follows particular procedure when checking a given term. That means, the system does not immediately check the given unknown term with all available dictionaries; rather, it first starts with

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domain-specific glossary and proceeds to general dictionary. This is in fact a dynamic operation. Such procedure helps the system to be more efficient (for example if the definition of the unknown term is in the domain-specific dictionary, the system would retrieve that information in small amount of time without the need to go through the more complex databases).

Note that regarding the “virtual dynamic image of the user’s knowledge” Futakuchi already teaches that the prior art system records the learning status of the student from which it recognizes the skill level of the student (i.e. virtual dynamic image of the user’s knowledge) and presents specific tips based on the student’s interaction with the system (see Para.0048). According to this teaching, the system accepts the student’s response for a given question and selects a particular tip based on the response. Thus, if the response indicates that the answer is wrong, then the system presents a wrong answer comment to the student. That means, the system dynamically recognizes the knowledge of the student based on the record (if a concept is unknown for the user based on the virtual dynamic image of the user’s knowledge) and presents tips or answer to the given issue. Of course, as it has already been presented in the previous Office Action (and also in this Final Office Action), Futakuchi does not explicitly teach a proactive dictionary connectable to the system.

However, one of ordinary skill in the art would be motivated to modify the invention of Futakuchi in view of Geshwind by incorporating the dictionary taught by Geshwind in order to allow the modified system of Futakuchi to utilize this dictionary to present tips or definitions for terms that are new or strange to the student based on



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the student's interaction with the system (i.e. based on the virtual dynamic image of the user's knowledge); thereby making the modified system of Futakuchi a more efficient teaching system.

(6) Applicant argues that regarding Claims 46 and 70, the use of filter means (18) in order to further adjust the particular order of presentation of Q/A's to the user is inherently different to the described system using "tips" in Futakuchi par. 0047.

Regarding claims 33, 40, 59 and 64, these claims are amended from "... based on stated interest and level of knowledge" into "... based on stated interest and knowledge", in order to be more concise in defining the difference between "level of knowledge" and "knowledge".

- In response to argument (6), the Examiner respectfully disagrees. Regarding the *filter means*, Applicant's argument does not appear to specifically point out the features that make the current invention different from the prior art. The argument seems to generally conclude that the use of the *filter means (18)* is inherently different to the described system using "tips".

However, the prior art discloses such filtering that presents information units to the student in a particular order (Futakuchi Para.0048).

Regarding Applicant's argument that there is a difference between *knowledge* and *level of knowledge*, the Examiner disagrees. First of all, it is very apparent to one of ordinary skill in the art (at the time of the invention was made) to recognize the fact that the system of the prior art is equally applicable for both terminologies. For instance, Geshwind discloses that the prior art system is applicable to different domains of

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knowledge (Para.0065). Thus, if a given student is believed to know a particular course in detail, one would say that the student has knowledge of that course; and another would also equivalently say the student has higher level of knowledge of that same course. The system of the prior art appears to work well for both of these terminologies.

Therefore, arguing about terminologies that do not change the functional/structural limitation or method steps of a given invention is NOT persuasive. Furthermore, Applicant's current invention does not appear to distinct these terminologies for any specific functional/structural limitations or method steps.

Thus, Applicant's argument in this regard is also NOT persuasive.

(7) Applicant argues that Geshwind explicitly describes features of Human-Computer Interaction in expert Systems in par. 0094 and par. 0101. Exemplified by "...the system asks the teacher/author..." and "The teacher/author will also be given the opportunity to..." and "...the teacher/author will, thus, be able to direct the system...". In contrast the present invention states Computer-Computer Interaction as texts (in a computer readable medium) are checked to a user's profile (in a database).

- In response to argument (7), the Examiner respectfully disagrees. First of all, this part of the argument also appears to contradict with Applicant's current invention. If the interaction of current invention is just computer-Computer, then the claimed feature for example "... provide selective training according to the user's knowledge . . ." would be uncertain. After all, the current invention is described to provide selective training according to the **user's** knowledge; and in order to do that **it has to interact with the**

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**user** at some point in time. The argument appears to contradict this fundamental principle of the invention.

Secondly, the currently presented claims do not distinctly specify the interaction of the system to be Computer-Computer only. In fact, as already indicated in the previous paragraph, the interaction involves human element also (which is the user).

Thirdly, the paragraphs (Geshwind Para.0094 and Para.0101) the Applicant relied upon in the above argument discusses some of the design features of the prior art system. These paragraphs discuss how the teacher/author arranges (organizes) the different tasks that are going to be carried out by the system. It is well known in the art (at the time of the current invention was made) that computer systems are first programmed by experts in the field (teacher/author) to execute a given set of tasks in a particular sequence before they are implemented as a learning/teaching device. However, this does not mean that the prior art's system is a Human-Computer interaction only.

Therefore, Applicant's argument with this regard is also NOT persuasive.

(8) Applicant argues that regarding Ho at col. 6, lines 11-23, this section does not, in contradistinction to the present invention, refer to extraction of (to the user suitable texts and fragments of texts to be used as) teaching and learning material from other text. Instead this section is referring to where Ho describes how the Selector (102) uses the Line item database (106) to extract appropriate questions using the Question Generator (106) from the Question database (118) in FIG 2. The inherent difference is that the claims of the present invention claim a system that handles text and fragments of texts

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(as would be preferred for language learning), while the reference describes the handling of questions (and answers).

- In response to argument (8), the Examiner respectfully disagrees. The currently presented claims do not distinctly specify the features as the Applicant is attempting to argue (e.g. extracting fragments of texts). For example claim 30 recites, “. . . extracting information units from non-preprepared information. . .”. Here, it is very evident that the “information units” would be questions and answers, questions only, answers only, part of a sentence, paragraph, etc. That means, the “information units” recited in the above claim does not necessarily imply *fragments of texts* only. As already indicated in the above sections (see response to argument (5)), claims are given the broadest reasonable interpretations.

Further more, the questions extracted in the prior art are made up of fragments of texts. That means, a given question is formed by collecting fragments of texts that forms *the word, the phrase, and the sentence* of the question. Therefore, this feature is already suggested by the prior art. Of course, the current claims do not even recite such feature (fragments of texts); however, the above discussion is provided to illustrate the fact that one of ordinary skill in the art would readily recognize such feature from the teaching of the prior art.

(9) Applicant argues that regarding claims 26, 44, 52 and 68, Ho describes the importance of repetition and review. However, Ho then describes the need to review after a number of weeks and a system with a prescribed "peak" when it is best for the User to review deemed by an equation. Why the need to review is decreasing after the

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"peak" is argued in line 40-50 as to be determined by the arranging of study into semesters. In contrast, the present invention is not constrained by the arrangement of study as prescribed by institutions like schools and universities, instead it is only taking into account the ability to learn and retain knowledge (as a result of the response to estimation/prediction by the system according to the invention). This is supported by "long term learning cycle". . .

- In response to argument (9), the Examiner respectfully disagrees. It appears that Applicant's argument is based on only one specific embodiment of Ho's system. Ho teaches that according to one of its embodiments, repeating a particular line-item depends on the amount of time elapsed from the time when that line-item was learnt. For example the line "**In one embodiment**, the learnt line-item is selected **depending on the time elapsed** from the time when the line-item is re-classified from the un-learnt to the learnt mode (box 300). The selection process dis-favors the line-item that has just been re-classified because presumably the line-item is still fresh in the student's mind . . ." (see col.9, lines 29-39) teaches the time dependency condition to repeat a particular line-item.

In addition to this, Ho further teaches that in an alternative embodiment, a line-item is repeated based on the student's ability to learn and retain knowledge. For example the line "**In another embodiment**, selecting a learnt line-item depends on the **mastery level achieved by the student** (box 302) **when the line-item was changed** from the **learnt mode** to the **un-learnt mode**. The lower the grade or the level achieved by the student, the higher the chance to select that line-item because the

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educational system should reinforce the student's weaker areas. Again, this can be represented by a weight function, which depends on the mastery level achieved by the student." (col.10, lines 6-14) clearly teaches that a particular line-item would be repeated based on the knowledge of the student. That means, if the student scored a low grade in a given line-item, the system would set this line-item to be repeated since the student has not learnt this line-item. This clearly indicates the fact that Ho's system does take the student's ability to learn and retain knowledge into consideration when repeating line-items.

Therefore, Applicant's argument in this regard is also NOT persuasive.

Note that, when evaluating a given claimed feature with the teaching of the prior art, the entire disclosure of the prior art must be considered (not just the sections cited by the Examiner). This is because, the claimed features are often taught or discussed in the various paragraphs of the reference.

(10) With regard to claim 26, Applicant argues that Meimer has indeed introduced a time component, but Meimer is prescribing a system with fixed levels which assigns this specific level's "new retest time interval" (FIG. 4, label 428), while the embodiment of the present invention is prescribing a system with an unlimited number of states or a progressive scale with no fixed levels and an unlimited number of variations of time intervals between testing and repetition.

Regarding Claim 27, 45, 53 and 69, Meimer indeed talks about something which could be viewed as "sorting" as described by the present invention's sorting tool (27). However Meimer only talks about (randomly) mixing the questions between learning

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sessions. In contrast the present invention describes a sorting algorithm which takes into account the short term learning ability of the User. . .

- In response to argument (10), the Examiner respectfully disagrees. First of all, the reset time intervals discussed in Meimer's system are for exemplary purpose only. For instance Meimer teaches, "Proceeding to a step 428, **the teaching computer 112 assigns** a new **retest time interval** to the correctly answered question. **For example**, as is shown in FIG. 3, questions falling within "Level 3" have a 6 day retest time interval. Assuming a question in learning level 320 ("Level 3") was answered correctly, it would be moved to learning level 324 ("Level 4") and the retest time interval would be set to 12 days. The teaching computer 112 would then return to the step 408 for further teaching and testing." (Para.0050). This does not mean that the Meimer's system always have a 6 d ay reset time interval for "level 3", and a 12 day reset time interval for "level 4". One of ordinary skill in the art would readily recognize from the teaching of Meimer that any suitable time period (whether constant or variable) would be configured by the artisan so that the system would adjust the time period accordingly.

Secondly, when the general condition of the claimed subject matter (e.g. extending the time required to change a given question from learnt-item to unlearned item) is as disclosed by the prior art, specifying this time to be a constant time interval or a variable time interval requires only a routine skill in the art.

Regarding the "sorting tool", Meimer does not discuss only about mixing questions from the previous learning sessions, as the applicant attempted to argue. Rather, Meimer also teaches that the system separates correctly answered questions

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from incorrectly answered questions, and forwards these questions to their respective levels. For example the line "In one embodiment, before presentation of the questions to the user, the questions in Level 1 are mixed to avoid the learning of information in sequence as well as to avoid any grouping of questions from a previous learning session. **Correctly answered questions** in Level 1 are then **forwarded to learning level 316** ("Level 2"). **Incorrectly answered questions** are **returned to** the beginning of the learning process into the **learning level 308** ("Missed Info")." (see Para.0067, lines 6-14) clearly teaches the sorting process carried out by Meimer's system. Note also that this sorting process considers the short term learning cycle, since the questions moved to "level 1" have shorter time period to be repeated than the questions moved to "level 2".

Therefore, the Examiner concludes that Applicant's currently presented claimed features have already been disclosed or suggested by the prior art for the reasons discussed above.

### ***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this final office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filled within



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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruk A. Gebremichael whose telephone number is (571)270-3079. The examiner can normally be reached on Monday to Friday (7:30AM-5:00PM) ALT. Friday OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI XUAN can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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